



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,821	01/25/2002	David B. Slater JR.	5308-162	4259
20792	7590	10/03/2003	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627			JACKSON JR, JEROME	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/057,821	SLATER ET AL.
	Examiner	Art Unit
	Jerome Jackson Jr.	2815

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 18 July 2003.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-123 is/are pending in the application.
- 4a) Of the above claim(s) 1-45, 47, 63, 75, 77 and 88-123 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 46, 48-62, 64-74, 76 and 78-87 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 January 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4, 6, 10</u> .	6) <input type="checkbox"/> Other: _____

Applicant's election with traverse of claims drawn to an ATON structure with reflector and contact layers of specific structure in Paper No. 13 is acknowledged. The traversal is on the ground(s) that all the claims are related. This is not found persuasive because the various claim groupings define separate inventions.

The requirement is still deemed proper and is therefore made FINAL. Note also that claim 37 and related claims are not and should not be grouped with claims 46,62, etc. because it relates to a separate invention including "pedestals".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 54 and 61 recite the limitation "patterned". There is insufficient antecedent basis for this limitation in the claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 46,48-62,64-74,76,78-87, are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter-Coman '207 in view of Krames '924 or applicant's prior art admissions and further in view of Mensz et al Elec. Lett. '97 and Lee Semi. Sci. Tech. '94.

Carter-Coman teaches an LED including a diode region, ohmic layer 32, reflector layer 34, diffusion barrier 36, and bonding layer 38. Carter-Coman also

shows a top ohmic contact layer 33. One difference between Carter-Coman and applicant is recitation of ATON structure. This difference is not patentable because ATON structure is well known as evidenced by applicant's prior art admissions and further by Krames figures 10 and 11. It would have been obvious to have practiced ATON structure in an LED structure as Carter-Coman to increase light emission. Another difference is recitation of adhesion, barrier, and bonding layers for the top contact. This difference is not patentable because these layers are suggested by Lee or Mensz. Lee teaches in figure 1 adhesion, barrier, and bonding layers for improved bonding in leds. It would have been obvious to have practiced similar layers in Carter-Colman to improve bonding to the ohmic layer 33. Likewise Mensz teaches reflector/ohmic layers for leds and it would have been obvious to have practiced similar layers in Carter-Coman to improve ohmic contact and light emission. Claim 62 is obvious structure. Claim 64 is rejected as layers 32,34 of Carter-Coman comprise a reflector/ohmic layer. Claim 65 is rejected as the metal ohmic layers of the applied art are "reflective". Claim 66 is rejected as the applied art suggests titanium adhesion layers. Claim 67-72 are rejected as the recited layers are standard in the metallurgy art. See also the described metals of Lee, Mensz and Carter. Claims 74 and 76, 78-87 are rejected as above. Claim 46 is broader than claim 62 and likewise rejected. Claims 48-53,55-60 are rejected as the prior art teaches similarly dimensioned metal layers.

Claims 53, 54 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter-Coman with Krames, Mensz, Lee and applicant's prior art admissions, and further in view of Haitz '202.

Haitz teaches a dot pattern for improved light emission. It would have been obvious to have practiced similar structure in Carter-Coman et al to improve light emission. Claims 53, 54 and 61 are obvious structure.

Taylor '243 is relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 703 308 4937. The examiner can normally be reached on t-th 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lee can be reached on 703 308 4915. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

jj

JEROME JACKSON  
PRIMARY EXAMINER